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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Serial No. 10/626,555

Confirmation No. 9329

In re Application of:

On Appeal From:

Nicolas ECHES, et al.

Group Art Unit: 3641

Filed: July 25, 2003

Examiner: Troy Chambers

For: SUB-CALIBERED PROJECTILES WITH MULTIPLE SUPPORTS

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REPLY BRIEF

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By: Hortense G. Coleman
Hortense G. Coleman

Roger W. Parkhurst
STEPTOE & JOHNSON LLP
1330 Connecticut Ave., NW
Washington, DC 20036
Tel.: (202) 429-6420
Fax: (202) 429-3902

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Attorney Docket No. 28971.0104

The Examiner's Answer mailed December 10, 2007, at page 5 argues that "one having ordinary skill in the art would have found it obvious to provide the sub-caliber projectile of Sippel with a rear support of Bisping." Based essentially upon that conclusion, the Examiner's Answer argues to maintain the grounds of rejection being reviewed on this appeal, as stated in Section VI, page 5, of Appellants' Brief on Appeal filed herein on April 12, 2007, as amended August 22, 2007.

**THERE IS NO SUGGESTION/MOTIVATION
FOR COMBINING SIPPEL WITH BISPING TO
OBVIATE APPELLANTS' CLAIMED INVENTION**

The Examiner's Answer, page 5, says that it would have been obvious "to provide the sub-caliber projectile of Sippel with the rear support of Bisping." And, the Examiner's Answer erroneously finds that "the suggestion/motivation for doing so would have been to allow for a practically constant compressive pressure and assure a proper guidance of the projectile during the barrel phase."

Each of the three §103(a) rejections of appellants' claims is based in whole or in substantial part upon the PTO's attempts to combine the disclosures of Sippel and Bisping.

At the bottom of page 7, the Examiner's Answer alleges that Bisping "addresses the lack of precision due to firing projectiles such as that disclosed by Sippel." The Examiner's Answer goes on to say that "according to Bisping, prior art projectiles such as the one disclosed by Sippel are inaccurate and imprecise because the "forcing pressure"...[Bisping, col. 1, ll. 9-15]... is not "substantially constant" or "uniform". (Bisping, col. 1, ll. 40-68)." Examiner's Answer pages 7-8.

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But Sippel U.S. Patent 5,289,777 issued March 1, 1994 from an application filed in the USPTO on February 26, 1993, claiming priority of a German application filed February 23, 1992. However, Bisping U.S. Patent 4, 524,695 issued June 25, 1985 from an application filed September 25, 1984, a continuation of a parent application filed September 8, 1981, which claimed priority of a French application filed September 23, 1980. Thus, the earlier Bisping patent, which predates Sippel by 9-12 years, could not have been referring to the Sippel '777 device.

Furthermore, Bisping, expressly refers to holding projectiles stationary in the tube of a weapon until the so-called "forcing pressure" is reached, which pressure is reached when the movement of the projectile commences. Bisping '695, col. 1, lines 9-15. Furthermore, Bisping, col. 1, lines 60-68, refer to the drawbacks of then-known techniques and using Bisping projectile to reduce dispersions in the "forcing pressure," and improving ballistic precision by assuring uniformity in the pairing of pressure of the combustion gases and initial velocity of the projectile and constancy of pressure at the muzzle of the weapon. But, as shown in applicants' Fig. 1, a Sippel-type projectile has its tail portion and fins in the breech portion of the tube, which has a diameter greater than the diameter of the barrel, so that any fins or pins located at the rear of the projectile would not be in contact with the inner surface of the breech at the time that "forcing pressure" is reached and movement of the Sippel-type projectile commences, as discussed in the portions of the Bisping disclosure cited in the Examiner's Answer.

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Page 10 of the Examiner's Answer argues that "according to Bisping, the fin/pin configuration decreases the disturbances on the projectile, and improves projectile performance." Bisping, col. 4, lines 43-55. In fact, Bisping, col. 4, lines 43-47 says that "via the fins" the projectile configurations displace forces caused by movement of the gun tube and thus disturbances on the projectile are decreased. And further in fact Bisping, col. 4, lines 47-54 in fact says "that fins and pins arranged at the rear of the launching shoe makes it possible, as compared with the known projectiles, to displace the thrust plate towards the front," which increases charge volume which substantially improves performance of this type of projectile. Thus, Bisping in fact says it is movement of the thrust plate towards the front that substantially improves performance, not the mere use of fins and pins arranged at the rear.

The Examiner's Answer on page 10, goes on to cite Bisping, col. 2, lines 1-12, but such disclosure in no way relates to the later Sippel structure. The Examiner's Answer, page 10 further says that "Bisping's solution to the disclosed problem [which could not have been in the later Sippel structure] is not dependent on the number of support structures within the barrel," This statement is not supported by the Bisping disclosure and is indeed directly contrary to Bisping, col. 4, lines 47-54, discussed above, which makes it clear that the improvements provided by the Bisping structure are in substantial part because it permits displacing the thrust plate towards the front, in a structure that as disclosed in Bisping, involves support structures only at two portions along the barrel surface. Further contrary to page 10 of the Examiner's Answer, Bisping does not teach that it is "necessary" to provide a set of rear fins 10 with pins 11 attached thereto. Contrary to the statements on page 10 of the Examiner's Answer there is

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nothing in either Bing or Sippel that "necessarily requires that Sippel incur a third, rear support scat." These statements are without basis in the prior art, and simply seek to conflate applicants' claimed invention into the prior art.

Finally, there is no disclosure in Sippel to support the Examiner's Answer, page 11 concluding sentence, to the effect that without the Bisping rear fin/pin configuration, the projectile of Sippel suffers the drawbacks disclosed in Bisping. Sippel came 9-12 years later than Bisping. The Sippel structure was an improvement over the Bisping structure, not a suggestion for any addition to the Bisping structure.

Thus, contrary to the unsupported assumption biasing the entire PTO prosecution history and Examiner's Answer herein, there is no clear suggestion, motivation, reason or necessity for combining the older Bisping rear fin/pin combination with the later Sippel structure.

For all the foregoing reasons, appellants respectfully request reversal of all three rejections under §103(a), and allowance of all claims 1-8 in this application.

Respectfully submitted,

2/11/08

Roger W. Parkhurst
Registration No. 25,177
STEPTOE & JOHNSON, L.L.P.
1330 Connecticut Ave, N.W.
Washington, D.C. 20036
Telephone: (202) 429-6420
Fax: (202) 429-3902